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Title : Hand Dryer

Claims

1. A hand dryer in which high-speed air current is jetted to both of wet hands that are stretched forth in a processing chamber in which both hands can be inserted or extracted through a put-in/out port with the hands arranged on a plane and waterdrops attached to the hands are blown away to the bottom of the processing chamber to dry the hands, wherein high-speed air current to blow away waterdrops is set as a line jet in such a manner that its center is positioned near wrists of the hands and both of its edges are positioned to correspond to fingertips with respect to both of arranged hands.
2. The hand dryer according to claim 1, wherein spot-shaped sub-jet is blown near the wrists of the hands at the center of the line jet.
3. The hand dryer according to claim 1 or 2, wherein an air volume of the line jet is increased as air is jetted from the center to both of the edges.
4. The hand dryer according to one of claims 1 to 3, wherein a local area to which air is not jetted is set at the center of the line jet.

[0003]

[Problem to be Solved by the Invention] In the conventional hand dryer as described above, main jet is prevented from being returned with droplets from sub jet, however, it is necessary to provide a high-pressure air current generator that has a capacity large enough to form main/sub jet. Furthermore, a problem arises in that returned sub jet hits a user on the face though droplets are not included, which makes the user uncomfortable. Most of processing spaces include a put-in/out port and an opening at both of their sides. Another problem occurs that air current including droplets blown into the processing space leaks outside through the opened sides and makes its surroundings wet or smeared.

[0012] An outlet of the high-pressure air current generator 2 is connected to a duct that is divided into a front side and a back side of the hand insertion unit 3 on its way, high-pressure air current sent from the high-pressure air current generator 2 is converted to high-speed air current at each edge of the divided duct, and a lateral line of air nozzles 6 that is arranged on a front side and a back side and through which air is jetted is connected to the hand insertion unit 3.

[0013] The two air nozzles 6 are laterally arranged to be opposed to each other in such a manner that ejection ports 7 are formed slightly downward substantially at the center of the front side and the back side near the put-in/out port 4 of the hand insertion unit 3. High-speed air current is jetted to hands inserted into the hand insertion unit 3 and waterdrops attached to the hands are separated out of surfaces of the hands without rubbing hands

together and are blown off into the hand insertion unit 3. The ejection ports 7 of the air nozzles 6 are constituted to be a slit bent at its center shown in Fig. 1 or to be a line of holes bent at their center shown in Fig. 3. The center is positioned at hand (near the wrist) with respect to both of arranged hands in the hand insertion unit 3 and both edges are positioned to correspond to fingertips (a tip of a fifth finger), so that a line jet 8 formed of high-speed air is formed. In other words, the line jet 8 has a two-dimensional shape in such a manner that the center of a section that is shaped to be at a right angle with respect to a flowing direction of high-speed air is positioned to be the highest.

[0014] In addition to the air nozzles 6, a sub nozzle 10 is arranged one by one like a spot to provide sub jet 9 to the center of the line jet 8 including the air nozzles 6 nearer the put-in/out port 4 than each of the air nozzles 6 in the hand insertion unit 3. The sub jet 9 blown through the sub nozzle 10 is set to be smaller in width and in discharge pressure than the line jet 8 including the air nozzles 6.

[0016] During the operation of drying hands, the line jet 8 supplied from the air nozzles 6 hits palms and backs of the hands substantially in a shape of a letter of He in Japanese shown in Fig. 2 with respect to both hands inserted skew in a downward direction with the hands arranged on a plane of the hand insertion unit 3. A bent portion at the center of the line jet 8 corresponds to a border between both of joined hands and a face of a user. The bent portion is smaller in jet volume than a right and left edge of the line jet. Much of the line jet 8 that hits the hands is blown away skew in a downward direction toward the inside of the hand insertion unit 3 with waterdrops separated from

the hands (streams indicated by A in Fig. 2). Part of the line jet 8 that hits the hands is blown back skew in an upper direction near the outside of the hand insertion unit 3 in such a manner as to be separated in a right and left direction (streams indicated by B in Fig. 2).

[0018]..... The spot-shaped sub jet 9 prevents the blowing-back, so that it hardly causes blowing-back itself from the center. The sub jet 9 is not associated with drying hands but dedicated to prevention of blowing-back. The spot-shaped sub jet 9 is smaller in width and can be formed without employing a high-performance high-pressure air current generator.

[0019] As the line jet 8 that functions as described above, the line jet 8 whose section is like an arc shown in Fig. 4 can be used. As shown in Fig. 5, the line jet 8 that has the smallest air volume at its center and larger air volume toward both of its edges can be also used. The center of arranged hands is a joined portion, which hardly needs to perform dry processing and corresponds to a face. As shown in Fig. 6, therefore, it is also efficient if a local space 12 without jet is set at the center of the line jet 8.